

REMARKS/ARGUMENTS

Claims 1-23 were pending in the present application when last examined. Claims 1, 3 and 4 have been amended and new claims 24 through 26 have been added. Therefore, upon entry of this amendment, which is respectfully requested, claims 1- 26 will be pending.

Objection under MPEP § 608.01

On page 2, item 1 of the Office Action, the Examiner objected to Paragraph 0052 as purporting to “incorporate via reference a link to the Unicode consortium” and Applicant was required to “delete the embedded... form of browser-executable code.” Paragraph 0052 was found to be devoid of a hyperlink or reference thereto. However, paragraph 0050 was found to include a non-code reference that may be the subject of the objection. Paragraph 0050 is therefore amended herein to assure absence of browser-executable code and withdrawal of the objection is respectfully requested.

Claim Rejections under 35 USC § 102(e)

Claims 1-30 have been rejected under 35 U.S.C. 102(e) as being anticipated by Millet, U.S. Patent Application Publication No. US 20030154197 (hereinafter "Millet"). Applicants respectfully traverse and request withdrawal of this rejection for at least the following reasons.

Millet discloses a database application that “by storing a set of data records... in a linked series of data tables,... permit[s] the user to change the structure of the data records without requiring modifications to the application software or the associated data table structures implemented in [an] RDBMS” (Millet at paragraph 40). The present invention instead relates to a multi-tenant database system in which one embodiment provides for storing multiple fields for multiple tenants in a single multi-tenant data structure, including defining a first data field for a first tenant having a first data type, defining a second data field for a second data tenant having a second data type, wherein the data fields may comprise database columns and the first and second data types may be different.

Applicant respectfully submits that Millet fails to teach or suggest limitations of the pending claims, and moreover, that Millet teaches away from the present invention.

Regarding claim 1, the Examiner asserts that Millet discloses "...defining a first data field for a first tenant, said first field having a first data type (See paragraph 0056); defining a second data field for a second tenant, said second field having a second data type, wherein the second data type is different than said first data type (See paragraph 0054)...". Applicants respectfully disagree.

Claim 1, as amended recites:

1. (Currently Amended) A computer-implemented method of storing multiple fields for multiple tenants in a single multi-tenant data structure, comprising:

defining a multi-tenant data structure having a plurality of data columns and one or more index columns;

defining a first data field for a first tenant, said first field having a first data type;

defining a second data field for a second tenant, said second field having a second data type, wherein the second data type is may be different than said first data type; and

when records having data values in the first and second fields are created by the first and second tenants, storing the data values of first and second fields to a single column in the data structure, wherein the single column includes data values having that may include different data types for different tenants; and

~~copying to a first one of the index columns the data values stored in the single data column for the first field in response to a request from the first tenant to index data in the first data field.~~

Millet fails to teach or suggest at least the limitation of "defining a multi-tenant data structure". Nowhere does Millet teach or suggest that the data structure disclosed therein is defined as a multi-tenant data structure. Millet further fails to teach or suggest at the limitations of "defining a first data field for a first tenant" or "defining a second data field for a second tenant", let alone "said first field having a first data type", "said second field having a second data type" or that "the second data type may be different than said first data type". Millet also fails to teach or suggest the limitations "when records having data values in the first and second fields are created by the first and second tenants, storing the data values of first and second fields

to a single column in the data structure” or **“wherein the single column includes data values having that may include different data types for different tenants”**. (emphasis added)

The Millet paragraphs cited by the Examiner completely fail to support or further contradict the Examiner’s assertion. Millet paragraph 0054 teaches that a first step of constructing a database includes separating keys of a data compilation into a separate data table that “stores only the... keys for [the] particular data compilation” (emphasis added). Millet paragraph 0056 further merely discusses how “attributes of each non-key field in a particular data compilation are stored in a “Custom Fields” table as items of data”, and provides no support whatsoever for the Examiner’s assertion.

Moreover, Millet teaches away from the present invention. For example, Millet teaches that its database type is “organized into columns of similar types of data” (paragraph 0041) which directly contradicts a “single column includes data values having that may include different data types”, or further, “wherein the single column includes data values having that may include different data types for different tenants”. Millet further teaches that “constraints or attributes are defined for each column” (paragraph 45), which contradicts the use of a single column to store different data types, and that its embodiment “is particularly useful when relatively few numbers of individual data records are accessed at a time”. Millet reinforces such contradiction several times, for example, in paragraph 0056 (“Such attribute information may include... the type of data in the field”, at least at paragraphs 0068 and 0069 that a field is equivalent to a column (“updating data fields... which is equivalent to updating data columns” and “delete a data field... is equivalent to deleting a data column...)).

It is therefore respectfully submitted that claim 1 is patentable over Millet for at least the foregoing reasons. Claims 2 through 4 and 24 through 26 depend from claim 1 and are patentable over Millet for at least the same reasons that claim 1 is patentable over Millet. Withdrawal of the rejections and early allowance of claims 1, 2-4 and 24-26 is respectfully solicited.

Present claim 5 recites:

5. (Original) A computer-implemented method of hosting multiple tables for one or more organizations in a single multi-tenant data structure, comprising:

- defining a multi-tenant data structure having a primary key column, an organization id column and a plurality of data columns;
- defining a first table for a first tenant, said first table having a first data field, and said first tenant having a first tenant id;
- assigning a first table id to the first table;
- defining a second table for a second tenant, said second table having a second data field, and said second tenant having a second tenant id;
- assigning a second table id to the second table;
- wherein when records are created for the first table by the first tenant, for each created record:
 - a) storing the value of the first data field to a single data column in the data structure;
 - b) storing the first tenant id in the organization id column; and
 - c) storing the first table id to the primary key column; and
- wherein when records are created for the second table by the second tenant, for each created record:
 - a) storing the value of the second data field to said single data column in the data structure;
 - b) storing the second tenant id in the organization id column; and
 - c) storing the second table id to the primary key column; and
- wherein the first and second tables of the first and second tenants are stored in the data structure.

The Millet paragraphs cited by the Examiner completely fail to support or further contradict the Examiner's assertion. Millet paragraph 0054 teaches that a first step of constructing a database includes separating keys of a data compilation into a separate data table that "stores only the... keys for [the] particular data compilation" (emphasis added). Millet paragraph 0055 further merely discusses how inclusion of custom data tables within a database structure may be constructed to store each data compilation, and provides no support whatsoever for the Examiner's assertion.

Moreover, Millet teaches away from the present invention. For example, Millet teaches that its database type is "organized into columns of similar types of data" (paragraph 0041) which directly contradicts "when records are created for the first table by the first tenant... storing the value of the first data field to a single data column in the data structure" and "when

records are created for the second table by the second tenant... storing the value of the second data field to a single data column in the data structure”. Millet further teaches that “constraints or attributes are defined for each column” (paragraph 45), which contradicts the use of a single column to store data from a first and second tenant that are not limited to the same or similar data types, and that its embodiment “is particularly useful when relatively few numbers of individual data records are accessed at a time”. Millet reinforces such contradiction several times, for example, in paragraph 0056 (“Such attribute information may include... the type of data in the field”, at least at paragraphs 0068 and 0069 that a field is equivalent to a column (“updating data fields... which is equivalent to updating data columns” and “delete a data field... is equivalent to deleting a data column...)).

It is therefore respectfully submitted that claim 5 is patentable over Millet for at least the foregoing reasons. Claims 6 through 8 depend from claim 5 and are patentable over Millet for at least the same reasons that claim 5 is patentable over Millet. Withdrawal of the rejections and early allowance of claims 5-8 is respectfully requested.

According to the Examiner, “claim 9 comprises substantially the same limitations as claim 5 and is thus rejected for the same reasons as set forth in the rejection of claim 5”. Therefore, assuming *arguendo* that the Examiner is correct, it is respectfully submitted that claim 9 is patentable over Millet for at least the same reasons that claim 5 is patentable over Millet. Claims 10 through 19 further depend from claim 9 and are patentable over Millet for at least the same reasons that claim 9 is patentable over Millet. Withdrawal of the rejections and early allowance of claims 9-19 is respectfully requested.

According to the Examiner, “claims 20 through 23 comprise substantially the same limitations as claims 1 and 5 and are thus rejected for the same reasons as set forth in the rejection of claims 1 and 5”. Therefore, assuming *arguendo* that the Examiner is correct, it is respectfully submitted that claims 20 through 23 are patentable over Millet for at least the same reasons that claim 5 is patentable over Millet. Withdrawal of the rejections and early allowance of claims 20-23 is therefore respectfully requested.

Support for various amendments to the claims can be found throughout the specification, for example at paragraph 44 (“types 1, 2 and 3 may be the same or they may be

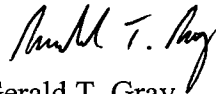
different and elsewhere”), paragraph 27 (“associated storage system and database application (e.g., RDBMS)” and elsewhere.

CONCLUSION

In view of the foregoing, all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 925-472-5000.

Respectfully submitted,



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